

## **REMARKS**

In the foregoing amendments, Applicants amended claim 5 by further defining that the steam generating unit is “operating.” The Specification at page 32 describes this limitation. In addition, Applicants added claims 15 and 16 to the application, which further define the quaternary ammonium compound in claims 5 and 8 as ( $\beta$ -hydroxyethyl) trimethylammonium hydroxide. Other claims and the Specification describe ( $\beta$ -hydroxyethyl) trimethylammonium hydroxide. Claims 5, 8, and 11-16 pend in this application. Applicants respectfully request reconsideration and allowance of these claims for reasons that follow.

Applicants greatly appreciate the courtesies extended by Examiner Peter Godenschwager to the undersigned in a telephone interview on February 1, 2010. During the interview, the undersigned discussed the foregoing amendment to claim 5, which basically further defines that the steam generating unit is “operating.” The Examiner agreed that this limitation is supported on page 32 of the Specification and indicated that this limitation distinguishes claim 5 from Shimura (JP 2002-129663).

During the interview, the Examiner and the undersigned discussed the data in the Specification, such as that in Tables 2 and 3 on pages 32 and 35. The undersigned explained that this data demonstrates the unexpected advantages of the presently claimed invention. The Examiner appeared convinced of the unexpected advantages for the presently claimed invention, but indicated that the showing in the Specification may only be directed to ( $\beta$ -hydroxyethyl) trimethylammonium hydroxide (commonly called “choline”), while claims 5 and 8 are directed to quaternary ammonium compounds of broader scope. In the foregoing amendments,

Applicants added claims 15 and 16 to the application that further define the quaternary ammonium compound in claims 5 and 8 as ( $\beta$ -hydroxyethyl) trimethylammonium hydroxide.

The Office Action rejected claim 5 under 35 U.S.C. § 103(a) as being unpatentable over Shimura in view of Vercammen (US 7,279,089). Applicants respectfully submit that the invention defined in claim 5 is patently distinguishable from the combined teachings of Shimura and Vercammen for the reasons set forth in the Amendment filed on July 18, 2009, which are incorporated herein by reference. Furthermore, claim 5 defines that the quaternary ammonium compound described by general formula [1] is added to the “operating” steam generating unit. On the other hand, the teachings of Shimura are concerned with adding an amine to boiler water contained within a *non-operating boiler*. Since the teachings of Shimura are concerned with a non-operating boiler, Applicants respectfully submit that these teachings can provide no reason to one of ordinary skill in the art to add the presently claimed quaternary ammonium compound described by general formula [1] to a steam generating unit while it is operating as presently claimed. The teachings of Vercammen do not cure or rectify this deficiency in the teachings of Shimura. At least for these reasons, Applicants respectfully submit that the invention defined in claim 5 is patently distinguishable from the teachings of Shimura and Vercammen within the meaning of 35 U.S.C. §103. Therefore, Applicants respectfully request that the Examiner reconsider and withdraw this rejection.

The Office Action rejected claims 8 and 11-14 under 35 U.S.C. §103(a) as being unpatentable over Braden (US 5,965,785) in view of Vercammen in two separate rejections. Applicants respectfully submit that the inventions defined in claims 8 and 11-14 are patently

distinguishable from the combined teachings of Braden and Vercammen for the reasons set forth in the Amendment filed on July 18, 2009, which are incorporated herein by reference.

In addition, Applicants submit that the data in the Specification demonstrates the unexpected advantages of the inventions set forth in claims 5, 8, and 11-16. Consider, for example, the data in Table 2 on page 32 of the Specification, which shows that the presently claimed quaternary ammonium compound (e.g., ( $\beta$ -hydroxyethyl) trimethylammonium hydroxide or choline) in the presently claimed method can neutralize boiler water efficiently with an unexpectedly smaller quantity of the compound when compared to other amines. The data in Table 3 on page 34 in the Specification demonstrates that the presently claimed quaternary ammonium compound (e.g., ( $\beta$ -hydroxyethyl) trimethylammonium hydroxide or choline) in the presently claimed method has an unexpectedly superior lower corrosion speed than ammonia and other amines. The data in table 5 on page 36 in the Specification demonstrates that the presently claimed quaternary ammonium compound (e.g., ( $\beta$ -hydroxyethyl) trimethylammonium hydroxide or choline) in the presently claimed method exhibits an unexpectedly superior hydrogen chloride formation inhibiting effect or hydrogen chloride neutralizing effect, while monoethanolamine or dimethylethanolamine exhibit no hydrogen chloride formation inhibiting effect or hydrogen chloride neutralizing effect.

Test Example 4 on page 39 and the chart in Fig. 3 of the Specification also demonstrate the unexpected advantages of the presently claimed invention. As shown therein, when the presently claimed quaternary ammonium compound is added to feed water, the magnesium chloride and the calcium chloride which cause hydrogen chloride formation are converted to a chlorine salt of the presently claimed quaternary ammonium compound. However, even though

the chlorine salt of the presently claimed quaternary ammonium compound is thermally decomposed, there is no formation of hydrogen chloride which causes the corrosion of metal. In this manner, Applicants respectfully submit that the presently claimed invention unexpectedly prevents secondary corrosion.

At least for these reasons, Applicants respectfully submit that the presently claimed invention is surprisingly superior and/or shows unexpected advantages when compared to the teachings of Shimura, Braden, and/or Vercammen. Accordingly, Applicants respectfully submit that the inventions defined in claims 5, 8, and 11-16 are patently distinguishable from Shimura, Braden, and/or Vercammen within the meaning of 35 U.S.C. §103. Therefore, Applicants respectfully request that the Examiner reconsider and withdrawal all rejections of Applicants' claims over these teachings.

In view of the foregoing, Applicants submit that this application is in condition for allowance. A timely notice to that effect is respectfully requested. If questions relating to patentability remain, the Examiner is invited to contact the undersigned by telephone.

A Request for Continued Examination (RCE) is being submitted herewith. No other fees are believed to be due. If any other fees are in fact due or if there are any problems with the payment of fees, please charge any underpayments and credit any overpayments to Deposit Account No. 50-1147.

Respectfully submitted,

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